



230132



Chris.English@CH2M.com

09/13/2004 04:47 PM

To

Subject Sauget Area 1: Field Oversight Report for Week Ending
September 10, 2004

Nabil and Sandy,

Please find attached a weekly report summarizing Sauget Area 1 field activities performed last week.
Please let us know if you have any questions regarding this information.

Thanks,

Chris

Chris English, P.E.

CH2M HILL

727 North First Street, Suite 400

St. Louis, MO 63102

Phone: (314) 421-0313 ext. 221

Cell: (314) 749-1550



E-Fax: (414) 454-8738 SA1_weekly_report_9-10-04.pdf

Weekly Summary Report

USEPA Oversight, Sauget Area 1, Sauget, IL

WA No. 239-RSBD-054V / Contract No. 68-W6-0025

Week Ending Friday, September 10, 2004

This report summarizes the Remedial Investigation/Feasibility Study (RI/FS) fieldwork conducted by Monsanto, Solutia, and their contractors from September 8, 2004 through September 10, 2004 at Sauget Area 1 Sites. The current RI/FS work consists of a dense non-aqueous phase liquid (DNAPL) Characterization and Remediation Study. CH2M HILL provided field oversight on three days during the week.

Contractors Onsite

- Golder Associates (consultant for Monsanto/Solutia)
- Groundwater Services Inc. (consultant/contractor to Monsanto/Solutia for the DNAPL Characterization and Remediation Study)
- Prosonic Corporation (drilling subcontractor to Groundwater Services Inc.)

Work Performed This Week

Groundwater Services Inc. (GSI) and Prosonic Corporation (Prosonic) were onsite during the week at Sauget Area 1 sites. The current phase of work is Task 4 of the DNAPL Characterization and Remediation Study Work Plan (GSI, April 2004), Soil Sampling and Installation of Piezometers. Preliminary work for Task 4 occurred on September 8 and 9, with drilling at Site H starting on September 10. Golder Associates (Golder) was onsite during the week providing field oversight on behalf of Monsanto/Solutia.

Site Walk, Piezometer Location Marking

On September 8, representatives of Golder, GSI, and CH2M HILL walked the 18 proposed soil boring/piezometer locations at the Sauget Area 1 Sites. Prior to the site walk GSI had obtained Global Positioning System (GPS) coordinates for the proposed boring locations, derived from data obtained during the seismic survey and the generated bedrock surface map. Boring locations were positioned in the field using a GPS unit and measures based on site features. Some boring locations, as described below, were adjusted from the locations as discussed during the August 24, 2004 meeting between the Sauget Area 1 Sites representatives, USEPA, IEPA, and CH2M HILL and presented on Figure 9 – Proposed Soil Boring / Piezometer Locations (dated August 19, and subsequently revised on August 27, 2004).

- Piezometer A1-12 was moved to the south, outside the planned construction area on Cerro property
- Piezometer A1-9 was moved to the south, outside of a busy area of plant operations on Cerro property. This well cannot be moved further east (within 100 feet) as a large stormwater culvert and the buried and lined Dead Creek are located in this area

- Shallow piezometer A1-17 was moved east approximately 100 feet to bring the piezometer closer to the existing shallow NAPL well, EE-11
- Other piezometer locations were positioned appropriately for safety during drilling, based on traffic and site conditions and bedrock features

Soil boring/piezometer locations were marked during the site walk and were later located precisely using GPS.

Soil Boring / Installation of Piezometers

Prosonic started drilling and piezometer installation at Site H on September 10 at the location of bedrock piezometer A1-3. The work was conducted under the direction of GSI on behalf of Solutia/Monsanto.

Prosonic used sonic technology to drill at Sauget Area 1. A 4-inch core barrel was utilized to advance the boring and collect samples. Subsequently, a 6-inch override casing was advanced to support the borehole. The borehole was drilled 5 feet into competent bedrock and continuously screened for the presence of non-aqueous phase liquid (NAPL).

Soil Logging and Field DNAPL Screening Tests

Soils were continuously logged and tested during drilling operations. Each 10-foot core was examined using the following field measures:

- Visual and olfactory observations to log soil and geologic conditions and to visually screen for the presence of DNAPL
- Head-space analysis of each 2½-foot interval of core using a Photo-ionization Detector (PID) to screen for organic vapors
- FLUTE™ strips, a dye-impregnated colored ribbon, directly applied to the soil core, which visually indicates the presence of NAPL
- Sudan IV dye soil testing vials, which will indicate the presence of NAPL in the tested volume of soil

The field screening at boring A1-3 indicated the highest organic vapor concentrations from head-space analyses at a depth of 8.5 to 11 feet below ground surface (bgs) at a concentration of approximately 331 parts per million (ppm). This interval was within the depth of the waste / fill area at Site H which was encountered between approximately 5 and 20 feet bgs. The waste observed at A1-3 was comprised primarily of shredded rubber and leather mixed with soils.

All FLUTE™ strips and Sudan IV dye tests were negative at all depth intervals in the boring. No visual indications of NAPL were observed in the soil cores extracted from boring location A1-3.

Soil Sampling

GSI collected one soil sample from each 10-foot interval of soil core to be submitted for laboratory analysis of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and total organic carbon (TOC). Each 10-foot soil core was sectioned into 2½-foot intervals, with criteria aimed to select the interval for analyses based on the most significant NAPL observations, if applicable. Chemical analyses of soil samples will be conducted by Severn-Trent Laboratories in Savannah, Georgia.

Additionally, three relatively undisturbed samples were collected from the boring using a split-spoon sampler. The samples were placed on a tray and wrapped in plastic for storage. These samples will be analyzed for physical properties including porosity, bulk density, and grain size. The physical properties analysis will be conducted by PTS Laboratories in California.

Piezometer Installation

At the end of the day on September 10, a well screen and riser were installed at piezometer A1-3. The piezometer was constructed to expose the screen to the bedrock core and the interval directly above bedrock in the Deep Hydrogeologic Unit (DHU). Piezometer A1-3 was constructed of riser pipe extending from approximately 3 feet above ground to 10 feet above the bedrock surface at 100 feet bgs, and 15 feet of screen was placed below the riser to 5 feet into competent bedrock. The total depth of well A1-3 was 115 feet bgs. The piezometer was constructed using 2-inch diameter stainless steel screen with a 0.010-inch aperture and 2-inch diameter stainless steel riser.

The piezometer construction of A1-3 proceeded by pouring sand directly into the borehole annulus around the well screen. Sand was poured to a depth of 2 feet above the top of the well screen, followed by a bentonite chip seal of approximately 2 feet in thickness. The 6-inch override casing was retracted from the borehole as the sand and bentonite were placed. Well construction at A1-3 will be completed on September 11, 2004.

Health and Safety

Initial drilling at each borehole location within a waste/fill area will commence with all personnel donning Level C Personal Protective Equipment (PPE) including respirator and Tyvek® chemical retardant suits. An exclusion zone will be established around the drill rig and sampling area within which Level C PPE will be required.

Drilling at location A1-3 proceeded for approximately 25 feet bgs with personnel wearing Level C PPE. The breathing zone was frequently monitored using a calibrated PID to check organic vapor concentrations throughout drilling operations. Additionally, a large fan was utilized to ventilate the drilling platform as an engineering control to minimize potential organic vapors in the breathing zone.

Work Anticipated Next Week

Soil boring and piezometer installation will continue throughout the following week with drilling scheduled at Site H and Site I. The GSI and Prosonic crews will work daily through September 16, and will return after a weekend break on September 21, 2004. It is projected in the current schedule that soil boring and piezometer installation will take approximately one and one half days at each location.

Photos from September 8, through September 10, 2004:



Soil cores were extruded from the core barrel into a plastic sleeve and placed on a trough table for observation and sampling (September 10, 2004).



Waste from boring location A1-3 included shredded rubber (September 10, 2004).



Sudan IV dye test vials were utilized to screen soils for the presence of NAPL (September 10, 2004).



The bedrock core at A1-3 was partially pulverized during extraction (September 10, 2004).